18. Discuss the following reactions

(a) Sommelet-Hauser

(b) Von Richter

(c) Rosenmund (4+3+3)

19. (a) What is R, S notation? Explain with examples (5)

(b) Discuss the asymmetric synthesis with suitable examples. (5)

20. (a) What is neighboring group participation? Give examples. (3)

(b) Discuss the conformational analysis of Decalin. (7)

NOVEMBER/DECEMBER 2025

23PCH11 — ORGANIC REACTION MECHANISM – I

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions

1. What is a reaction coordinate diagram?

2. Define Huckel's rule Give an example.

3. What is the S_E^i mechanism?

4. Write an illustrate for diazonium coupling reaction?

5. How is smiles rearrangement occured?

6. Non-classical carbocation. Define

7. What do you understand from prochiralit?

8. Define stereospecificity. Give an example.

9. Write the significance of Brett's rule.

10. What is the Cotton effect?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions

11. (a) Explain the Hammett equation with suitable example.

Or

(b) Highlight Hammond's postulate with suitable examples.

12. (a) Elaborate the orientation and reactivity of nitration in chlorobenzene.

Or

(b) Discuss the S_E^1 and S_E^2 mechanisms with suitable examples.

13. (a) What are factors affect the aliphatic nucleophilic substitution reaction? explain.

Or

(b) Explain the aromatic nucleophili substitution reaction.

14. (a) What are enantiotropic and diastereotropic protons? Explain.

Or

(b) Discuss the stereochemistry of allenes and spiranes.

15. (a) Illustrate the axial haloketone rule, using examples.

Or

(b) Discuss the Octant rule with examples.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. (a) What is the Cross-over experiment?

(b) What are the methods involved in determining the reaction mechanism? explain. (2+8)

17. (a) Discuss the Friedel-Crafts alkylation and acylation reaction. (3+3)

(b) Discuss the aromaticity of benzenoid and non-benzenoid compounds. (2+2)